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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,024	03/31/2004	Raoul J. Belleau	T0529.70016US00	9189
7590	12/12/2005		EXAMINER	
Edmund J. Walsh Wolf, Greenfield & Sacks, P.C. 600 Atlantic Avenue Boston, MA 02210			ROBERT, RUSSELL MARC	
			ART UNIT	PAPER NUMBER
			2829	

DATE MAILED: 12/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/815,024

Applicant(s)

BELLEAU, RAOUL J.

Examiner

Russell M. Kobert

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 18 is/are rejected.
- 7) ☒ Claim(s) 11-17 and 19-24 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0604.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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1. Applicant's election of Invention I in the reply filed on 3 November 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election **without traverse** (MPEP § 818.03(a)).

2. Applicant's amendment to claims 19 and 22 to be dependent on elected method claim 1 is hereby acknowledged and Applicant's admission that all claims in the application are therefore within the elected invention is further acknowledged; there being no other claims pending to other inventions in the instant application.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Leonida (5367200).

Leonida anticipates a method of measuring duty cycle of an interval of a signal, comprising the acts:

providing as an input signal repetitions of the interval of the signal (signal 30 and col 2, ln 66-68);

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making a plurality of comparisons of the value of the input signal to a threshold at controlled times relative to the start of a repetition of the interval, making the plurality of comparisons including varying the controlled time (using the discussed ramp generator and Voltage Controlled Oscillator (VCO) as the clock input to flip-flop 34; see also col 3, ln 2-5, 30-40); and

computing a duty cycle, based on the number of comparisons having a value in a predetermined range relative to the threshold (col 3, ln 8-30); as recited in claim 1.

As to claim 2, having the signal being a digital clock and the interval being a positive integer multiple of the period of the clock is anticipated by Leonida (col 2, ln 53-55).

As to claim 18, having the controlled times controlled so that the plurality of comparisons are made at times relative to the start of a repetition of the interval that are uniformly distributed over the duration of the interval is anticipated by Leonida (in the embodiment of Figure 6, Leonida discusses the use of a control 76 that is dependent on instruction from a CPU 70 that determines this instruction based on multiple input signals IN1 to Inx (col 3, ln 67 - col 4, ln 29)).

5. Claims 3-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leonida (5367200) as applied to claim 1 above, and further in view of Bowhens et al (4792932).

Although Leonida does not show the signal being a differential signal, Bowhens et al shows the measurement of differential signals (col 3, ln 21-24) as described in claim 3.

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Although Leonida does not show the method being performed using automatic test equipment, Bowhers et al discusses in its entirety the use of automatic test equipment for making time measurements including duty cycle as described in claim 6.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have combined the teaching of Bowhers et al with the teaching of Leonida to make the claimed invention because each utilizes test methods for determining duty cycles in digital electronic systems and to automate the control of such an apparatus, using automatic test equipment and the such, permits less user intervention and more control of operations such as recording and displaying data for improved analysis and calibration of clock timers. Moreover, the limitations of claims 4, 5 and 7-10 are considered to be within the normal range of operating the apparatus of the above combination.

6. The following is a statement of reasons for the indication of allowable subject matter:

Claims 11-17 and 19-24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The added limitation of making a plurality of comparisons comprises running a test pattern a plurality of times and varying the controlled time further comprises varying the controlled time between runs of the test pattern as further detailed in claim 11 has not been found.

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The added limitation of having the automatic test equipment used in the process of making semiconductor devices to measure the duty cycle of a signal produced by semiconductor devices being manufactured and the computed duty cycle being further used to alter the process of making the semiconductor devices as further described in claim 14 has not been found.

The added limitations of the automatic test equipment comprising failure processing circuitry having the act comprising running a pattern with the timing generator programmed to produce strobe signals with a first time relationship to the input signal, the pattern programming the expect value of the comparator to be a value indicating that the input signal is in a first logical state; and at the end of the pattern, recording the count of comparisons made by the failure processing circuitry indicating that the value at the input of the comparator deviates from the expected value; and iteratively altering the programming of the timing generator to produce strobe signals with a different time relationship to the input signal, rerunning the pattern and recording the count of comparisons indicating that the value at the input of the comparator deviates from the expected value made by the failure processing circuitry as further described in claim 19 has not been found.

It is further noted that the examiner's reasons are understood to be predicated upon consideration of each of the claims as a whole, and not upon any specific elements of the claims.

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7. A shortened statutory period for response to this action is set to expire three month(s) from the date of this letter. Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Russell Kobert whose telephone number is (571) 272-1963. The Examiner's Supervisor, Nestor R. Ramirez, can be reached at (571) 272-2034. For an automated menu of Tech Center 2800 phone numbers call (571) 272-2800.



Russell M. Kobert
Patent Examiner
Group Art Unit 2829
December 5, 2005



VINH NGUYEN
PRIMARY EXAMINER

A.U. 2829
12/08/05